Datasheet
Fujitsu Storage ETERNUS CS8000 series V6.0

Radically simplifying backup and archiving

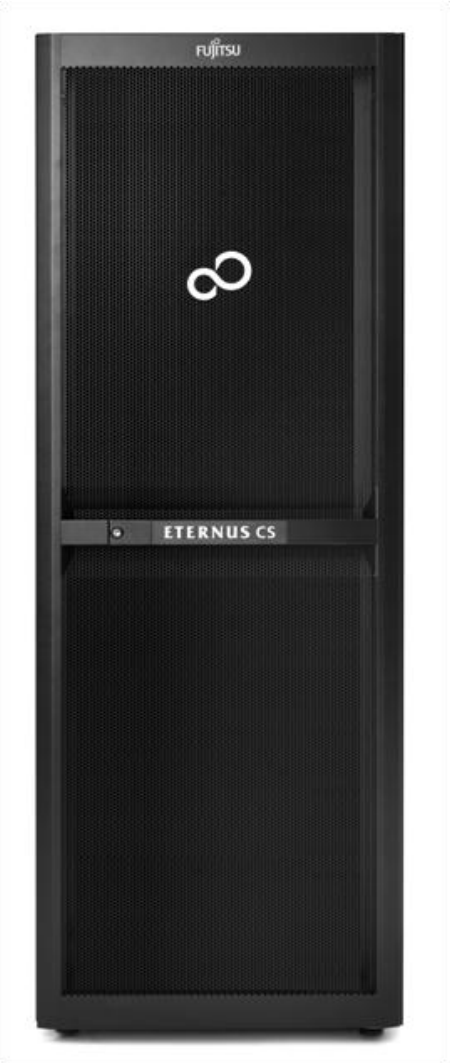
Unified Data Protection Appliance

Fujitsu Storage ETERNUS CS8000 is a unified data protection appliance for the complete consolidation of backup and archiving infrastructures of open systems and mainframes.

Thanks to uniform management of disks, deduplicated disks and tapes flexible service levels regarding capacity, speed and cost can be provided. A modular grid architecture delivers extreme scalability of capacity and performance. Integrated data mirroring and replication features enable comprehensive disaster recovery concepts.

Flexible SAN and Ethernet connectivity as well as VTL, NAS and WORM support allow you to use one system for backup and archiving. And support for the cloud gateway functionality makes ETERNUS CS8000 an ideal and future-proof solution for a unified and optimized data protection infrastructure.

- One consolidation platform for backup and archiving for open systems and mainframes
- Flexible service level delivery as regards capacity, speed and costs
- Extremely scalable grid architecture with comprehensive high availability and disaster recovery capabilities



Features and benefits

Main features	Benefits
One consolidation platform for backup and archiving for open systems and mainframes	■ Thanks to complete consolidation all disk and tape target systems for mainframes and open systems enable large savings in infrastructure investments and costs of operation. ■ Combining VTL and the NAS option for backup, archiving and second-tier file storage in one appliance further increases operational efficiency ■ Integrated management of disks, deduplicated disk and tapes enables flexible service levels in terms of capacity, backup/restore speed and media costs ■ The support for cloud gateway functionality leverages own investments in storage capacity and enables disaster recovery concepts without investing in own DR sites
Extremely scalable grid architecture	■ Flexible scalability of performance and capacity reduce high upfront pre-investments and support a pay-as-you grow approach ■ Allocate storage resources for data protection according to business priorities ■ Industry-leading backup and restore performance enable you to manage extreme data growth and volume without migration risks ■ Parallelization of deduplication processes delivers the performance headroom required to benefit from data reduction even in petabyte-scale environments
Comprehensive high availability and disaster recovery capabilities	■ No single point of failure even for the deduplication store ■ Asynchronous replication and synchronous mirroring enable flexible DR concepts depending on remote distance and recovery time needs ■ Manages multiple data copies on local and remote targets to align the availability level of data with its importance to the business ■ Automated processes ensure a highly efficient DC operation, easy media migrations, scheduled media refreshes to prevent data corruption and the ability to eliminate fatal errors in highly complex data protection environments

Optimized backup and archiving

ETERNUS CS8000 is a data protection appliance that radically consolidates and simplifies backup and archiving in heterogeneous IT environments with mainframes, UNIX and x86 systems. It virtualizes target systems and creates one logical data protection platform. ETERNUS CS8000 works as the only target system for the whole environment and in so doing provides more flexibility and higher service levels at less cost.

The basis of the solution is a modular grid architecture. Independent building blocks provide a scale-out platform. The result is a made-to-measure solution with great flexibility and scalability. The basic workflow is as follows: Data from the application is sent to ETERNUS CS8000 and received by the front-end processor node. It is stored in the internal RAID storage. The data can then be further copied to a tape library via the back-end processing node.

Connectivity

To provide full consolidation, ETERNUS CS8000 supports a large scale of mainframes, UNIX, x86 and other server platforms. All environments can be deployed to the same backup infrastructure. Workloads and capacities can be varied as needed and the available resources can be optimally utilized.

Capacity

ETERNUS CS8000 comes with a great flexibility to grow, from 7 TB up to 15 petabytes of physical disk capacity. All data received via the VTL interface is automatically compressed before being saved on disk. The disk store can act as the final target or as a cache. Physical tape libraries can be connected and data can be automatically moved to tape. The support of several tape libraries in parallel increases the amount of data ETERNUS CS8000 is able to handle up to the exabyte magnitude.

Alternatively to the backup-to-disk-to-tape process, ETERNUS CS8000 can also work as a final disk storage target with deduplication. For this purpose ETERNUS CS8000 can be enhanced by including a deduplication functionality. Physical disk capacity - from 1TB up to a maximum of 4.8 petabyte - can be used as deduplication storage.

Speed

The scale-out architecture allows a scalable system performance. By adding front-end processor nodes the performance can be increased when necessary. This decouples investments in performance from the storage capacity. ETERNUS CS8000 provides the highest levels of performance, in specific configurations more than 100 TB/h for backup-to-disk. Many backup processes can be handled in parallel.

The deduplication functionality also benefits from the scale-out infrastructure and the deduplication workload can be parallelized between several front-end processor nodes, which will speed up the whole process.

Data availability

To ensure the availability of this very big storage pool, all components are redundant. But there isn't only a redundancy of components. With the backup-to-disk-to-tape process ETERNUS CS8000 can keep multiple copies of the data by writing data to local and remote tape libraries and by asynchronous replication within a range of thousands of kilometers.

The core element of the most disaster resilient architecture is one logical ETERNUS CS8000 system, which is deployed over two geographically separated sites, the so called "split-site configuration" with "cache mirror". The internal ETERNUS CS8000 infrastructure is thereby extended to a second site. The result is a system with no single point of failure, which continues to run even after a complete site failure. This represents the best in disaster protection for all mission-critical data, and can even cope with worst-case scenarios.

Flexible SLAs

To provide flexible SLAs, ETERNUS CS8000 combines the strengths of disk, deduplication and tape technology with automated, rule-based management: An option of deciding when to use disks, tape or even a mix of both in order to keep performance in balance with media cost.

The other part of providing flexible SLAs is that ETERNUS CS8000 manages different levels of data availability. Data can be mirrored between two sites, replicated over very long distances and saved as multiple copies. This function is also user defined and policy based. Human errors are eliminated and there is almost zero management effort after setup.

Archive / second-tier file store

As an option, ETERNUS CS8000 provides standard NAS interfaces with NFS and CIFS protocols for archiving and file storage purposes. It supports billions of files and can serve as an archive target as well as a second-tier storage target to relieve the production storage systems. The internal ETERNUS CS8000 disk storage basically acts as the final target for the data. Optionally, the direct integration with tape enhances the appliance for Hierarchical Storage Management to automatically save data on disk and tape, according to defined migration policies, availability levels and - if required – write-protected retention periods.

Investment protection

ETERNUS CS8000 provides investment protection in several aspects. A project may start with a small configuration which can grow step-by-step. The modular grid architecture provides the flexibility in capacity and performance aspects. Also changes in the infrastructure can be matched quite easily – for example to introduce a new generation of tape library or tape drives. ETERNUS CS8000 takes care of data migration, from the old tape library to the new one. ETERNUS CS8000 allows you to easily adapt to future requirements.

Technical details

General System Information			
Model	CS8200	CS8400	CS8800
Type	Scale-up System	Scale-out-single site System	Scale-out-split-site System
Hardware platform	S12	S12	S12

Front-end Ports			
Options	VTL only	VTL only NAS only VTL and NAS	VTL only NAS only VTL and NAS
VTL Front-end Ports	4 to 8 FC/FICON 8Gb	4 to 40 FC/FICON 8 Gb	4 to 40 FC/FICON 8Gb
Virtual Tape Drives	32 to 64	32 to 1280 (FC) / 1280 (FICON)	32 to1280 (FC) / 1280 (FICON)
NAS Front-end Ports	-	4x1GbE to 40x1GbE or 2x10GbE to 40x10GbE	4x1GbE to 40x1GbE or 2x10GbE to 40x10GbE

Sustained Performance			
VTL	Up to 5 TB/h	Up to more than 100 TB/h with selected configurations with a compression ratio 3:1	
NAS	-	Up to 27 TB/h	Up to 34 TB/h

internal Data Storage			
RAID Capacity (uncompressed)	7.2 TB to 948 TB	7.2 TB to 15.2 PB	7.2 TB to 15.2 PB
VTL Deduplication Store Option (raw)	-	1 to 4800 TB	1 to 4800 TB
Virtual Tape Volumes (max.)	300,000	3,000,000	3,000,000
NAS Shares (max.)	-	2048	2048
Number of Files (max.)	-	2 Billion	2 Billion

Back-end Ports			
Options	VTL Or none	VTL only NAS only VTL and NAS Or none	VTL only NAS only VTL and NAS Or none
Notes	Back-end port options depend on applied front-end ports		
VTL Back-end Ports	4 to 8 FC 8Gb	4 to 40 FC 8Gb	4 to 40 FC 8Gb
NAS Back-end Ports	-	4 to 16 active FC 8Gb 4 to 16 passive FC 8Gb	4 to 16 active FC 8Gb 4 to 16 passive FC 8Gb
Physical Tape Drives	10	2 to 112	2 to 112
Physical Tape Volumes (max.)	50,000	50,000	50,000
Physical Tape Libraries	Up to 2	Up to 10	Up to 10

Host interoperability	
Bull	GCOS 8
Fujitsu	MSP, XSP, VME (ICL) BS2000/OSD
IBM	z/OS, OS/390, i5/OS, z/VM, z/VSE
Open Systems	AIX HP-UX Solaris SUSE LINUX, Red Hat LINUX, z/Linux Windows NDMP Backup (NetApp, EMC)
Notes	For the detailed support matrix please contact your Fujitsu sales representative

Supported backup and archiving software for open systems	
Atempo	Time Navigator
CommVault	Simpana
Computer Associates	BrightStor ARCserve Backup
EMC	Networker, DiskXtender
Fujitsu	Networker
HP	DataProtector
IBM	Tivoli Storage Manager
SEP	Sesam
Seven Ten Storage	StorFirst Altus
Symantec	Backup Exec, NetBackup, EnterpriseVault
Notes	For the detailed support matrix please contact your Fujitsu sales representative

Supported physical tape libraries	
Fujitsu	ETERNUS LT40, LT60, LT130, LT160, LT270 Scalar 100, SL500, 9084-221, 3560, TX24/TX48
IBM	3494, 3584 / TS3500
Oracle / StorageTek	SL500, SL1400, SL3000, SL8500, L180, L700/E, L5500, PowderHorn 9310, TimberWolf 9740
Quantum / ADIC	Scalar i500, Scalar i2000, Scalar i6k, Scalar 10k, Scalar 100, Scalar 1000, AML/J, AML/E, AML/2
Spectra Logic	Spectra T50, T120, T200, T380, T680, T950
Notes	For the detailed support matrix please contact your Fujitsu sales representative

Supported physical tape drives	
IBM	Magstar 3590, Jaguar 3592 / TS1120 / TS1130, TS1140
LTO Ultrium	Gen 1, Gen 2, Gen 3, Gen 4, Gen 5
Oracle / StorageTek	T9840, T9940, T10000
Notes	For the detailed support matrix please contact your Fujitsu sales representative

Installation Specification	
Dimension (H x W x D)	2,003 x 700 x 1,050 mm(per Rack) (78.86 x 27.56 x 41.33 inches)
Height (Standards)	42 HU racks
Weight (kg / lbs)	280 to appr. 7700 / 617 to appr. 16976
Power consumption (kW)	1.05 up to appr. 52
Heat emission (BTU/h)	4015 up to appr. 176.800
Sound pressure (dB(A))	<60dB(A)
Rated Voltage	Industry: 2 or 3 phases of 230 V US: 2 supplies of 208 V (phase to phase)
Fuse protection	Industry: 16 A per phase (fuses not coupled) US: 20 A per phase
Power Connection Options	EE single phase(blue plug), CEE triple phase (red plug), L6-30 connector (US 208V)

Environmental	
Room air conditioned	Recommended, at 20°C with a RH of 50-60%
Floor air supply	no
Temperature Operating limits	15°C to 35°C (59 to 95°F) at 30 to 70% relative humidity, non-condensing
Temperature Operating	Long Term at 20°C (68°F), max 2 hours at minimum 15°C or maximum of 35°C (59 to 95 °F)
Humidity Operating	Long Term at appr. 50% RH, Tolerances at 30 to 70% RH (relative humidity, non-condensing)
Operating environmental guideline	FTS 04230 – Guideline for Data Center (installation locations)
Operating environment Link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe

Maintenance and Support Services	
Standard warranty	2 Years
Recommended Services	24 x 7 Fujitsu support for enterprise class services. Please check your specific service level with your FUJITSU sales organization or partner.

Compliance with Standards	
Product safety	CE, UL/CSA (others on request)
Radiation, EMI	CE, C-tick, FCC, VCCI (others on request)
EMI Class	Class B

More information

Fujitsu Services

Professional Services

Fujitsu provides complete support for data protection optimization. Covering everything from consulting and design to integration and inspection services, these professional services are designed to ensure that your ETERNUS CS8000 satisfies your requirements within your data center. The smooth handover to operational work delivers the basis for optimized maintenance services.

Maintenance Services

The ETERNUS CS8000 SolutionContract provides proactive and reactive maintenance and support services according to customer's needs. The proactive service elements enable the early identification of critical system conditions and the initiation of preventive measures, for example a System Health Check to ensure that the required performance and high availability of the solution infrastructure are sustained. A dedicated Technical Account Manager is responsible to ensure sustained service quality.

More information

Learn more about Fujitsu ETERNUS CS8000, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
www.fujitsu.com/eternus

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:
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Website: www.fujitsu.com/eternus
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